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# THE CONDOR A MAGAZINE OF WESTERN ORNITHOLOGY.



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## THE BARROW GOLDEN-EYE IN THE OKANAGAN VALLEY, BRITISH COLUMBIA

By J. A. MUNRO

THROUGHOUT the interior of British Columbia the Barrow Golden-eye (*Clangula islandica*) is an abundant summer visitant, but, unlike the common Golden-eye, this species does not winter on the fresh water lakes where it is so numerous during the nesting season. Throughout the winter months it is found on the seacoast, in the many sheltered estuaries from Puget Sound to Hecate Strait and Dixon Inlet. In seven seasons of winter collecting in the Okanagan district, I have taken but five specimens of *islandica*. The birds first begin to appear on Okanagan Lake early in March, but are not plentiful until the small mountain lakes are free of ice, early in April.

The lakes selected for courtship, and later for the rearing of the young, are usually quite open and free of tules; hence the Golden-eyes are always conspicuous and much easier to study than ducks that breed in the sloughs and hide their young in the thick vegetation. Generally by the 15th of April each little lake has its flock of courting Golden-eyes, often thirty or forty on a sheet of water of fifty acres extent or less. In these flocks adults and immatures are present in about equal numbers. The young of either sex do not breed until the second year, and do not assume their breeding dress until the second fall after they are hatched, that is, when they are over a year old.

Small flocks of young females are seen during the summer, generally on lakes where there are no adult females with broods of young. Specimens collected, with undeveloped ovaries, had the bill dusky brown in color, sometimes with slight yellow markings, whereas in the adult female the bill is dark chrome yellow. In the spring, young males show a partially formed white crescent at the base of the bill, partly white scapulars, and a few violet feathers on the otherwise dull brown head. These immatures males leave the country with the adult males in May, soon after the females have begun to brood their eggs. I have taken only one male of this age in the summer (May 17, 1916) and have

never seen an adult male at this season. Mr. Allan Brooks is of the opinion that the males go directly to the coast at this time.

The courtship display is witnessed in the flocks just prior to their splitting up into pairs. It is attended by much solemn bowing on the part of the drake, with a frequent backward kick, sufficiently strong to send a jet of water several feet into the air. His violet head is puffed out to the greatest possible extent, and altogether he is a handsome bird as, in a frenzy of sexual excitement, he swims up to the soberly attired duck. Sometimes the entire flock will commence to feed as if at a given signal, and again all the birds will simultaneously take wing and circle about the lake several times before once more splashing down to resume their courtship.

By May 1 all breeding birds are mated and scattered over the country, seldom more than one or two pairs on a lake. The Barrow Golden-eye shows a marked predilection for lakes that are strongly alkaline, even if they are poor in aquatic vegetation and in the midst of an open country with the nearest timber a half mile or more away. Such lakes are rich in small crustaceans, the chief food of this duck, and no doubt the lakes are occupied on account of the food provided, without reference to the availability of nesting sites.

An abandoned flicker's hole is usually selected for the nest, frequently in a dead yellow pine, for in this tree decay is rapid, and the hole soon becomes much enlarged. One can generally tell if the hole is occupied, by the fragments of down adhering to the rough bark at the entrance. The tree is often so much decayed that a single tug at the bark near the hole will remove the whole adjacent surface, exposing the gray-green eggs where they lie in the clinging soft down. It is rather hard to locate the nest when the tree selected by the bird is in heavy timber a half mile or more from the lake, but, when the female is sitting, it may be done by making an early morning trip to the lake, remaining under cover, and waiting for her to come to the lake to feed. She generally arrives between 9 and 11 and immediately joins the drake. After splashing and preening her feathers, she feeds most industriously for perhaps an hour and then flies directly back to the nest.

I include here data for three nests taken in the Okanagan region.

Okanagan, British Columbia, May 12, 1916. A nest containing eleven fresh eggs was found in the hayloft of a deserted log barn, on the shore of a lake. The eggs were placed in a hollow scooped in the straw under a heavy beam which rested on the piled-up straw. The loft was well lighted through the spaces between the logs and by a large opening at one end. This situation is, of course, most unusual, but it had apparently been used some years before the nest was found. I had seen broods of young on this lake in previous years, when I was not able to find the nest. The birds would generally alight on top of a chimney in an unused house close by before flying into the barn.

Farney's Lake, Okanagan, May 31, 1912. A nest with seven partly incubated eggs was placed in a large cavity in a yellow pine stump, standing in eight inches of water on the shore of the lake. The cavity containing the eggs was eighteen inches above the water and the eggs were in plain view of a person standing several feet away.

Rolling's Lake, May 26, 1917. A nest containing seven fresh eggs was found in an old fir stub, standing in eighteen inches of water near the shore of the lake. The top of the stub had rotted out to a depth of two feet and the eggs were at the bottom of this cavity. Down could be seen protruding through a small hole in the stub, a few inches above the eggs.

May 22 is the earliest date on which I have seen the young, and by August 1 they are full grown. At this time they are remarkably tame, allowing an approach to within a few yards and then, if alarmed, swimming to the middle of the lake, rather than taking wing. This fearlessness is characteristic until the shooting season opens in September, when they soon become wary. At this time, the birds rise from the water as one approaches, but almost invariably circle about the lake several times and then fly towards anyone standing on the shore, thus affording an easy shot. By the last week in October, when the common Golden-eye, Redhead and Scaups are returning from the north, the last of the Barrow Golden-eyes have left.

The feeding habits of the two species of Golden-eye are identical. Both species are greatly attracted by the small crawfish lurking under large stones in shallow water. While hunting these shellfish, the ducks work rapidly along the shore, diving every few minutes, to probe under the edges of the large stones. They invariably try to submerge even if the water is not deep enough to cover their backs, and I have never seen them dipping as Redheads and Scaups frequently do. One can follow the Golden-eye's movements as it encircles the large stones, by the commotion on the surface and by frequent glimpses of the duck's back. In shallow water, the birds remain below from fifteen to twenty seconds, the crawfish being brought to the surface to be swallowed. By the end of winter the feathers on the forehead are generally worn off, through much rubbing against stones in this manner of foraging. When feeding in deep water, over the beds of *Potamogeton* they stay in the same place until satisfied. In such places the small snails and crustacea that attach themselves to the stems of *Potamogeton* form their chief food, but little vegetable matter being taken beyond what is eaten with the shells. The small shellfish are swallowed while the birds are below the surface of the water, unlike the procedure followed with the larger crawfish. Their stay under water is of fairly uniform duration, ranging from fifty to fifty-five seconds. At the beginning of the dive the tail is raised and spread to its full extent.

As far as I have been able to observe, there is no difference in the flight of the two species of Golden-eye. Both have the same clumsy way of rising, and of flying close to the surface before attaining any speed; once under way they travel swiftly, and one's attention is held by the distinctive, musical whistle of their wings. Both the Barrow Golden-eye and the American Golden-eye are less gregarious than others of our ducks with the exception of the mergansers. I have never seen the Barrow Golden-eye in large flocks except in the mating season. When feeding, two or three birds together are the rule, and five or six the maximum number noted. It is difficult to distinguish the young of our two species of Golden-eye. The only constant difference is in the shape of the bill. In comparison with *americana* the bill of *islandica* is shorter, deeper at the base and more sharply narrowing towards the tip. The nail is wider at the front, projects farther over the tip of the bill, and is slightly raised above the bill, forming a noticeable lump. These differences are more apparent in the freshly killed birds than they are in dried study specimens. The black bar across the speculum, generally described as a diagnostic feature, is of little use in identifying young birds. I have seen young males of *islandica* with immaculate speculums, and several of *americana* with noticeable bars crossing this tract.

*Okanagan Landing, British Columbia, Canada, December 5, 1917.*